

EXERCISE APPARATUS

FIELD OF INVENTION

This invention relates to exercise apparatus and has particular relevance to apparatus for exercising the stomach and lower back region of the human body.

BACKGROUND ART

There are numerous types of apparatus for exercising the stomach, all of which are characterised by or mimic the traditional sit-up and/or leg raise exercises.

These types of exercises, however, involve curling the body and bunching or crunching the stomach muscles.

DE 3844233 and DE 3632124 disclose a concave bench in which a user on the bench can perform trunk curling exercises against the resistance of a bungee cord. DE 3632124 discloses a similar apparatus.

JP 1016 5538 and JP 1031 4338 discloses a device where a user supported on a concave bench performs trunk curling exercises against the resistance of weights.

Exercises with the above apparatus, are general toning and not specifically designed focus on the combined trunk and lower back regions.

It is my belief that stretching the stomach muscles will provide a more beneficial form of stomach and lower back exercise and toning.

It is a general object of the present invention to provide an exercise apparatus which will enable stomach and lower back exercises to be performed against or with a resistance in a beneficial manner.

Further objects and advantages of the present invention will become apparent from the ensuing description which is given by way of example.

DISCLOSURE OF INVENTION

According to the present invention, there is provided an exercise apparatus comprising;

(a) an arch-shaped bench having a base for supporting the bench on a ground surface, and

- 5 (b) a leverage bar suspended below the bench by a pivot connection positioned at a high point of the bench, said leverage bar extending towards both ends of the bench with a first end of the leverage bar extending beyond a first end of the bench and being provided with a weight bar, and
- 10 (c) gripping handles mounted on the first end of the leverage bar between the first end of the bench and the weight bar, the arrangement and construction being such that a person lying on the bench in a prone position can perform stomach and lower back exercises by gripping the gripping handles and curling their trunk against resistance provided by the leverage bar.

The gripping handles can be configured to provide optional gripping positions.

- 15 The gripping handles can support a head rest and a leg roll.
A second end of the leverage bar can support a counterweight bar.

The second end of the bench opposite the first end can mount a pivotable knee roll.

- 20 The base of the bench can be provided with a pair of hand grips.
The knee roll can be height adjustable.

A section of the bench adjacent the first end thereof can be adjustable on an incline.

25 **BRIEF DESCRIPTION OF THE DRAWINGS**

Aspects of the present invention will now be described by way of example only, with reference to the accompanying drawings which,

Figure 1 is a side view of an exercise apparatus according to one possible embodiment of the present invention, and

- 30 Figures 2 and 3 are side views illustrating one form of primary exercise conducted on the apparatus of the present invention, and

Figures 4 and 5 are side views of another form of primary

exercise conducted on the apparatus of the present invention, and

Figures 6, 7, and 8 are side views of supplementary exercises which can be performed on the apparatus of the present invention.

5 With respect to the drawings, exercise apparatus according to the present invention can comprise an arch-shaped bench generally indicated by arrow 1 which is adapted to be self-supporting on a ground surface 2.

The bench 1 is of sufficient width to accommodate the body of the average adult person and the arc of the bench is designed to provide a gentle concave posture to a person's body lying on their back or stomach and
10 supported by the bench with the legs and arms extending towards either ends of the device.

The upper surface 3 of the bench 1 may be provided with massaging rollers (not shown) or may be conventionally upholstered.

Resistance means generally indicated by arrow 4 are associated
15 with one or both ends of the bench 1 and positioned to be manipulated by the hands and/or feet of a person laying on the bench.

In the illustrated example the resistance means 4 comprise cantilevered weight stacks 5, 6.

The cantilevered weight stacks are connected to a leverage
20 device generally indicated by arrow 7.

The leverage device 7 comprises an arm 8 having a generally U-shaped central portion 9 having one end 10 hinged to the bench 1.

Another end 11 of the arm 8 extends to provide support for weight stack 5, a leg roll 12, a head rest 13 and gripping handles 14 in the
25 configuration illustrated.

The leg roll 12, head rest 13 and gripping handles 14 are supported by an upright 15 extending from end 11 of the arm 8.

The leg roll 12 is padded similar to rolls used in other types of exercise equipment.

30 The head rest 13 is a padded board.

The gripping handles 14 provide two separate gripping positions 16, 17 which include hand grips.

At an opposite end of the bench 1 a further knee roll 18 is provided.

The knee roll 18 is height adjustable on a support 19 and may also be repositioned in a horizontal position for some exercises as indicated
5 by the directional arrows.

Each of the weight stacks 4 allow additional weights to be added and for this reason are provided with weight bars.

As with other forms of exercise apparatus it is desirable that operative elements of the exercise apparatus of different sizes and abilities.

10 In this respect the position of the upright 15 on arm 11 can be adjusted relative to the bench 1 and on relocation refixed in position using a releasable locking device (not shown).

The support 15 can have a base plate slidable in a rail on the top side of the arm 11.

15 Another form of adjustment is provided by a hinged section 23 of the bench 1.

The hinging enables the section 23 to be inclined to alter the arching of a persons body.

20 Figures 2 and 3 of the drawings illustrate a primary abdominal exercise using the apparatus of the present invention.

In this form of exercise at the start a person lies on their back on the bench, 1 grips the gripping handles 16 with the hands, lays the head on the head rest and the legs over the knee roll 18.

To finish the exercise the trunk is repeatedly raised and lowered.

25 Figures 4 and 5 of the drawings illustrate a further primary reverse hyper extension exercise using the apparatus of the present invention.

To complete this exercise a person lies on the stomach and grips handles 24 fixed to the base of the bench frame.

30 At the beginning of the exercise the feet are engaged beneath the roll 12.

The exercise is finished as the legs are raised with the exerciser

keeping their legs as straight as possible throughout the movements.

Figures 6 to 8 of the drawings illustrate self explanatory resistance free movement exercises which may also be contemplated by a user.

5 There are a number of advantages of the present invention.

 The hamstrings are used in abdominal work-out.

 Contracting the hamstring to up the upper body totally disengages the hip flexors.

 Crunches done on a flat surface create opposing tension from
10 the upper and lower ends of the abdomen to meet in the midriff, forcing the stomach to bunch upwards creating the very bulge we want to get rid of.

 The present invention places the body on an arc with the stomach uppermost; the crunch finishes where a flat surface's crunch starts, thereby preventing the stomach from bulging upwards.

15 Furthermore, the contraction of the hamstrings pulls the transverse muscles downward creating the desired concave effect.

 Exercise using the present invention places the body in such a position that you cannot "cheat" by using momentum.

 If a person is are unable to do crunches on flat surfaces, with
20 weight assistance on the apparatus they can still do crunches in perfect form.

 The curve of the bench fully supports the natural arc of the body making it safer for the back.

 World renown strength coach and authority Charles Poliquin, has quoted "training your abs on a flat surface may increase the curvature in
25 your lower back, placing many of the weaker structures of the lower back at a high risk of injury. Excessive lumber curvature may cause your head and shoulders to move forward which can cause neck pain and tension headaches. In the long tem, poor posture from improperly trained abdominals causes muscular and neck pain and accelerates degenerative
30 diseases throughout the entire spine."

 I consider that the present invention will provide a new approach and benefits to exercise of the stomach, largely due to the benefit of

stretching the torso as opposed to bunching the stomach muscles as is the case with conventional apparatus and methods.

Aspects of the present invention have been described by way of example only and it will be appreciated that modifications and additions thereto may be made without departing from the scope thereof, as defined in the appended claims.